

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 529452001940	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2004/031617	International filing date (day/month/year) 23/09/2004	(Earliest) Priority Date (day/month/year) 23/09/2003
Applicant CHIRON CORPORATION		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 9 sheets.

☐

It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐

The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☒ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☒ **Certain claims were found unsearchable** (See Box II).

3. ☒ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☒

the text is approved as submitted by the applicant.

☐

the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒

the text is approved as submitted by the applicant.

☐

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. _____

☐

as suggested by the applicant.

☐

as selected by this Authority, because the applicant failed to suggest a figure.

☐

as selected by this Authority, because this figure better characterizes the invention.

- b. ☒ none of the figures is to be published with the abstract.

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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
 - a. type of material
 - ☒ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☐ in written format
 - ☒ in computer readable form
 - c. time of filing/furnishing
 - ☒ contained in the international application as filed
 - ☐ filed together with the international application in computer readable form
 - ☐ furnished subsequently to this Authority for the purpose of search
2. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-30, 33, 34, 38-49 and 55; all partially

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-30, 33, 34, 38-49 and 55; all partially

Nucleic acid arrays comprising at least two nucleic acids, one of which comprises at least 10 contiguous nucleotides of SEQ ID NO: 5, while the other comprises at least 10 contiguous nucleotides of any of the sequences listed in claim 1; methods of diagnosing cancer comprising determining the level of expression of a nucleic acid of SEQ ID NO: 5.

2. claims: 1-30, 33, 34, 38-49 and 55; all partially

Peptide arrays comprising at least two polypeptides, one of which is encoded by any open reading frame within SEQ ID NO: 4, while the other is encoded by any open reading frame within any of the sequences listed in claim 4.

3. claims: 1-30, 33, 34, 38-49 and 55; all partially

Peptide arrays comprising at least two polypeptides, one of which is encoded by SEQ ID NO: 5, while the other is encoded by any of the sequences listed in claim 5.

4. claims: 1-30, 33, 34, 38-49 and 55; all partially

Peptide arrays comprising at least two polypeptides, one of which is SEQ ID NO: 6 and the other is any of the sequences listed in claim 6.

5. claims: 1-30, 33, 34, 38-49 and 55; all partially

Antibodies or fragments thereof that bind polypeptides derived from SEQ ID NO: 4; hybridomas producing them; kits and pharmaceutical compositions comprising them.

6. claims: 1-30, 33, 34, 38-49 and 55; all partially

Methods of detecting the presence of cancer cells using antibodies against polypeptides derived from SEQ ID NO: 4

7. claims: 1-30, 33, 34, 38-49 and 55; all partially

Kits comprising at least two nucleic acids, one of which hybridizes to a nucleic acid derived from SEQ ID NO: 4

8. claims: 1-30, 33, 34, 38-49 and 55; all partially

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Kits comprising at least two nucleic acids, one of which hybridizes to a nucleic acid derived from SEQ ID NO: 5

9. claims: 1-30, 33, 34, 38-49 and 55; all partially

Methods of screening for anticancer activity using cells expressing a gene encoded by SEQ ID NO: 4

10. claims: 1-30, 33, 34, 38-49 and 55; all partially

Methods of screening for anticancer activity using cells expressing a gene encoded by SEQ ID NO: 5

11. claims: 1-30, 33, 34, 38-49 and 55; all partially

Methods of diagnosing cancer comprising determining the level of expression of a polypeptide of SEQ ID NO: 6

12. claims: 1-30, 33, 34, 38-49 and 55; all partially

Methods of detecting cancer comprising detecting the level of activity of a polypeptide of SEQ ID NO: 6

13. claims: 1-30, 33, 34, 38-49 and 55; all partially

Methods of detecting cancer comprising detecting the level of antibodies against a polypeptide of SEQ ID NO: 6

14. claims: 1-30, 33, 34, 38-49 and 55; all partially

Methods of screening for anticancer drugs capable of modulating the activity of a protein encoded by SEQ ID NO: 5

15. claims: 1-30, 33, 34, 38-49 and 55; all partially

INVENTIONS 15 TO 448:

Methods and products for the diagnosis and treatment of cancer based on gene 1-007 and its gene products (SEQ ID NOS: 7-12; Table 125).

+++ [idem for each one of the remaining genes listed in Table 125] +++

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C07K14/47 C12Q1/68 G01N33/574

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12Q G01N C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, EMBASE, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 03/008583 A (MORRIS DAVID W ; ENGELHARD ERIC K (US); SAGRES DISCOVERY (US)) 30 January 2003 (2003-01-30) abstract pages 1-4 pages 32-37 claim 1; table 6 Seq. Id Nos: 19-24 ----- -/--	1-30,33, 34, 38-49,55

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
"&" document member of the same patent family

Date of the actual completion of the international search

17 February 2005

Date of mailing of the international search report

18 -07- 2005

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE GEO [Online] NCBI; 11 March 2002 (2002-03-11), AFFYMETRIX, INC.: "Affymetrix GeneChip Human Genome U133 Array Set HG-U133A" XP002317788 retrieved from HTTP://WWW.NCBI.NLM.NIH.GOV/PROJECTS/GEO/ Database accession no. GLP96 probes "206337_at" and "221455_s_at" abstract</p>	1-30,33, 34, 38-49,55
X	<p>----- HOEPKEN UTA E ET AL: "Up-regulation of the chemokine receptor CCR7 in classical but not in lymphocyte-predominant Hodgkin disease correlates with distinct dissemination of neoplastic cells in lymphoid organs" BLOOD, vol. 99, no. 4, 15 February 2002 (2002-02-15), pages 1109-1116, XP002292389 ISSN: 0006-4971 the whole document</p>	1-30,33, 34, 38-49,55
X	<p>----- MUELLER ANJA ET AL: "Involvement of chemokine receptors in breast cancer metastasis" NATURE (LONDON), vol. 410, no. 6824, 1 March 2001 (2001-03-01), pages 50-56, XP002292390 ISSN: 0028-0836 the whole document</p>	1-30,33, 34, 38-49,55
X	<p>----- DATABASE MEDLINE [Online] US NATIONAL LIBRARY OF MEDICINE (NLM), BETHESDA, MD, US; November 2001 (2001-11), KATOH M: "Molecular cloning and characterization of human WNT3." XP002317789 Database accession no. NLM11604997 abstract & INTERNATIONAL JOURNAL OF ONCOLOGY. NOV 2001, vol. 19, no. 5, November 2001 (2001-11), pages 977-982, ISSN: 1019-6439</p>	1-30,33, 34, 38-49,55
A	<p>----- WO 02/057497 A (MORRIS DAVID W) 25 July 2002 (2002-07-25) the whole document</p> <p style="text-align: center;">----- -/--</p>	

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>AUGENLICHT L H ET AL: "CLONING AND SCREENING OF SEQUENCES EXPRESSED IN A MOUSE COLON TUMOR" CANCER RESEARCH, AMERICAN ASSOCIATION FOR CANCER RESEARCH, BALTIMORE, MD, US, vol. 42, no. 3, March 1982 (1982-03), pages 1088-1093, XP000929512 ISSN: 0008-5472 the whole document</p> <p>-----</p> <p>A</p> <p>US 2003/073162 A1 (LAL PREETI G ET AL) 17 April 2003 (2003-04-17) paragraph [0251]</p> <p>-----</p>	

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Information on patent family members

national Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03008583	A	30-01-2003	US 2003194702 A1	16-10-2003
			US 2004072264 A1	15-04-2004
			US 2004072154 A1	15-04-2004
			US 2003216558 A1	20-11-2003
			WO 03008583 A2	30-01-2003
			US 2003232334 A1	18-12-2003
			US 2002182586 A1	05-12-2002
			US 2003165878 A1	04-09-2003
			US 2003099963 A1	29-05-2003
			US 2003087252 A1	08-05-2003
			US 2003064383 A1	03-04-2003
			WO 03035837 A2	01-05-2003
			CA 2465921 A1	15-05-2003
			EP 1469870 A2	27-10-2004
			JP 2005508175 T	31-03-2005
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			AU 2002364708 A1	10-06-2003
			CA 2468316 A1	05-06-2003
			EP 1476067 A2	17-11-2004
			JP 2005510225 T	21-04-2005
			WO 03045230 A2	05-06-2003
			AU 2002364052 A1	09-07-2003
			CA 2470844 A1	03-07-2003
			EP 1469769 A2	27-10-2004
			JP 2005512558 T	12-05-2005
			WO 03053224 A2	03-07-2003

WO 02057497	A	25-07-2002	EP 1354065 A2	22-10-2003
			JP 2005505235 T	24-02-2005
			WO 02057497 A2	25-07-2002

US 2003073162	A1	17-04-2003	US 5932445 A	03-08-1999
			AU 1309599 A	31-05-1999
			WO 9924463 A2	20-05-1999
